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EXAMINER

WOLLSCHLAGER, JEFFREY MICHAEL

ART UNIT	PAPER NUMBER
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1791

NOTIFICATION DATE	DELIVERY MODE
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06/19/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/562,047	Applicant(s) ESTUR ET AL.	
	Examiner JEFFREY WOLLSCHLAGER	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-37 is/are pending in the application.
- 4a) Of the above claim(s) 2, 26 and 34-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-25 and 29-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/23/05</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

It is noted for the record that this application has been transferred to Examiner Wollschlager in Art Unit 1791.

Election/Restrictions

Applicant's election with traverse of Group I, claims 15-25 and 29-35, in the reply filed on February 6, 2008 is acknowledged. The traversal is on the ground(s) that a lack of unity between the groups has not been established. In particular, applicant argues that claim 37 includes each of the features of claim 15 and that the present set of claims includes combinations that fall within rule 1.475(b), and that as such, the claims must be considered to have unity of invention. This argument is not persuasive. As an initial matter, the examiner addresses the restriction between product claim 26 and process claim 15. The examiner notes that claim 26 is a product claim directed to a pearl comprising an expanded polyamide or polyester having a continuous skin. Claim 15 is directed to a process of forming a generic expanded thermoplastic polymeric pearl having a continuous skin. The special technical feature which links claims 15 and 26 is an expanded polymeric pearl having a continuous skin. However, as set forth in the 12/31/07 restriction, this special technical feature is known in the art as evidenced by EP 0 450 205 (page 4, lines 18-30 showing the pearl may be made of polyamide or polyester and is expanded; page 6, lines 30-32 showing a continuous skin and Example 2). Therefore, the special technical feature fails to define a contribution over the prior art and unity of invention is lacking between claim 15 and claim 26. The same analysis regarding the special technical feature is applicable to the restriction between claim 15 and claim 37, but additional analysis is required in view of the product-by-process nature of claim 37 (i.e. applicant's argument that claim 37 includes each and every feature of claim 15) and applicant's argument regarding rule 1.475(b).

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The examiner notes that MPEP 2113 recites the manner of treating product-by-process claims. The examiner submits that MPEP 2113 is generally applicable to US originating cases and 371 national stage cases since MPEP 2113 nowhere mentions whether the section is intended for determining patentability in US originating cases only or in US originating and 371 national stage cases. MPEP 2113 states:

“Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product. See, e.g., In re Garner, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979)

Additionally, regarding applicant's argument that the present set of claims includes combinations set forth in rule 1.475(b), and as such must be considered to have unity of invention, the examiner points to the following from MPEP 1850 I:

PCT Rule 13.2, as it was modified effective July 1, 1992, no longer specifies the combinations of categories of invention which are considered to have unity of invention. Those categories, which now appear as a part of Chapter 10 of the International Search and Preliminary Examination Guidelines, may be obtained from >the Patent Examiner's Toolkit link or from< WIPO's website (www.wipo.int/pct/en/texts/gdlines.htm). The categories of invention in former PCT Rule 13.2 have been replaced with a statement describing the method for determining whether the requirement of unity of invention is satisfied. Unity of invention exists only when there is a technical relationship among the claimed inventions involving one or more special technical features. The term “special technical features” is defined as meaning those technical features that define a contribution which each of the inventions considered as a whole, makes over the prior art. The determination is made based on the contents of the claims as interpreted in light of the description and drawings.

Within this context, the examiner submits that since it has not been established that the process limitations are critical in the product-by-process claim (claim 37) and since the special

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technical feature linking the product claims (claim 37) and process claims (claim 15) is known, as evidenced by EP 0 450 205 for the same reasons set forth above, and since applicant's argument that claim 15 and claim 37 must be considered to have unity of invention under rule 1.475(b) is not controlling in view of modified PCT Rule 13.2, the examiner also maintains that the restriction requirement between claim 15 and claim 37 is proper.

The requirement is still deemed proper and is therefore made FINAL.

Additionally, during an interview with Mr. Martin Bruehs on May 8, 2008 (via voice mail) it was determined that claims 34 and 35 are also to be treated as product claims (see interview summary).

Claims 26-28 and 34-37 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on February 6, 2008.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

The disclosure is objected to because of the following informalities: In the published application, US 2007/0036967, the following words are misspelled: "Any" is misspelled "Ary" (paragraph [0021]), "According" is misspelled "Accordiig" (paragraph [0030]), "the" is misspelled "te" (paragraph [0036]) and "yhe" (paragraph [0040]), "obtained" is misspelled "obtaindd"

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(paragraph [0050]), “single” is misspelled “sinle” (paragraph [0060]), and “equipped” is misspelled “equippee” (paragraph [0065]). Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15-18, 20-22, 25, 29, 32 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Pontiff (EP 0 450 205).

Regarding claim 15, Pontiff teaches a method of producing a shrunken thermoplastic foamed bead (i.e. expanded pearl) (page 4, lines 16-18) having a continuous skin (page 6, lines 30-32) wherein a foamable/expandable composition of a thermoplastic polymer and a blowing agent/expanding agent are melt mixed in an extruder (Example 2), extruded to form a foamed/expanded strand and cooled and chopped to form the foamed/expanded bead (page 4, lines 19-38; page 7, lines 23-34; page 8, lines 24-54).

As to claim 16, Pontiff discloses that inert gases such as nitrogen and carbon dioxide may be employed as the blowing agent (page 4, lines 24-26; page 11, lines 44-46). As set forth in the original disclosure, published as US 2007/0036967, paragraph [0027], nitrogen and carbon dioxide meet the limitation.

As to claim 17, Pontiff teaches that solid materials that decompose to form a gas, such as azodicarbonamide, may be employed as the blowing agent (page 4, lines 24-26; page 13, lines 27-32).). As set forth in the original disclosure, published as US 2007/0036967,

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paragraph [0028], the decomposing blowing agents, such as azodicarbonamide meet the limitation of a pore-forming agent.

As to claim 18, Pontiff teaches the blowing agent may be a volatile compound such as hydrocarbons, halogenated hydrocarbons, or various other volatile organic compounds (page 4, lines 24-26; page 8, lines 24-27; page 11, lines 40-50; page 12, lines 5 and 6).

As to claim 20, Pontiff teaches the thermoplastic material may be a polyamide (page 4, lines 26-30).

As to claim 21, Pontiff teaches nucleating agents and processing aids may be employed (page 7, lines 23-25; Example 1).

As to claims 22 and 29, Pontiff teaches conventional additives such as fillers and anti-static agents may be employed (page 14, lines 40-42).

As to claims 25, 32 and 33, Pontiff teaches shrunken foam beads having densities as low as 12.8 kg/m^3 may be produced (page 7, lines 50-55). It is noted that 12.8 kg/m^3 equals 0.0128 g/cm^3 .

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

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the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pontiff (EP 0 450 205), as applied to claims 15-18, 20-22, 25, 29, 32 and 33 above, in view of Amano et al. (US 5,234,640).

As to claim 19, Pontiff teaches the method of claim 15 as set forth above. Pontiff does not teach that the blowing agent comprises a chemical compound that can react chemically with the polymer by heating to generate a gas. However, Amano et al. teach a method of producing foamed thermoplastic materials wherein they disclose that aromatic polycarbonate is known to be a blowing agent and suggest that it is an equivalent alternative of azodicarbonamide, nitrogen, carbon dioxide, and various other blowing agents (col. 4, lines 11-30). The examiner notes that in the original disclosure, published as US 2007/0036967, paragraph [0030], polycarbonate is disclosed as a blowing agent that meets the instant limitation.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Pontiff and to have employed polycarbonate as a blowing agent, as suggested by Amano et al., since Amano et al. suggest polycarbonate is an equivalent alternative blowing agent known in the art to be suitable for forming a foamed product (MPEP 2144.06-2144.07).

Claims 23, 24, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pontiff (EP 0 450 205), as applied to claims 15-18, 20-22, 25, 29, 32 and 33 above, in view of Al Ghatta et al. (US 6,306,921).

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As to claims 23 and 30, Pontiff teaches the method of claim 15 as set forth above. Pontiff does not teach cooling the foamed material with liquid water. However, Al Ghatta et al. teach a method of producing foamed beads of thermoplastic polyester resin wherein the beads are cooled in a water bath (col. 2, lines 53-58).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Pontiff and to have cooled Pontiff's foamed beads in a water bath, as suggested by Al Ghatta et al., for the purpose, as suggested by Al Ghatta et al., of controlling the surface crystallinity of the bead (col. 1, lines 26-31; col. 2, lines 53-58).

As to claims 24 and 31, Pontiff teaches the method of claim 15 as set forth above. Additionally, Pontiff teaches the size of the beads is determined by the size of the holes in the die and the speed of the cutting knife (page 8, lines 37-44) and further discloses die holes having a 1.6 mm diameter (Example 2). As such, while Pontiff suggests the size of the beads may be readily controlled and optimized as a function of die hole size and cutting speed, Pontiff does not provide a discussion regarding the amount of die swell or the relative amount of ensuing shrinkage necessary to conclude the size of the actual bead. However, Al Ghatta et al. teach the diameter of foamed beads suitable for molding is between 1 mm and 15 mm (col. 1, lines 4-6; col. 2, lines 34-35).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Pontiff and to have formed foamed beads between 1 mm and 15 mm, as suggested by Al Ghatta et al., for the purpose of producing a foamed bead having a size suitable for subsequent molding applications.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY WOLLSCHLAGER whose telephone number is (571)272-8937. The examiner can normally be reached on Monday - Thursday 6:45 - 4:15, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeff Wollschlager/
Examiner, Art Unit 1791

June 17, 2008